Claims 23-24, 26-27 are pending in this application. Applicants have cancelled claims 20-22 and 25.

Double Patenting

Claims 20-22 have been rejected under 35 U.S.C. §101 as claiming the same invention as that of claims 1-4 of prior U.S. Patent No. 6,084,069 and claims 1-3 of prior U.S. Patent No. 5,449,753, and claim 9 of prior U.S. Patent No. 5,731,167. Applicants respectfully disagree with this rejection. However, applicants have cancelled claims 20-22. Therefore this rejection is moot.

Claim 25 has been rejected under 35 U.S.C. §101 as claiming the same invention as that of claim 5 of prior U.S. Patent No. 6,084,069. Applicants respectfully disagree with this rejection. However, applicants have cancelled claim 25. Therefore this rejection is moot.

Claims 23-24 have been rejected under 35 U.S.C. §101 as claiming the same invention as that of claim 1 of prior U.S. Patent No. 5,449,753. Applicants respectfully disagree. The instant claims 23-24 relate to a method of purifying an autotaxin polypeptide, whereas claim 1 of U.S. Patent No. 5,449,753 is directed towards a polypeptide selected from human autotaxin protein. These are distinct inventions. Applicants respectfully request reconsideration and withdrawal of this §101 and Double Patenting rejection.

35 U.S.C. §112

Claims 20-27 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. In particular, the Examiner has objected to claim 20 for recitation of the phrase "comprising an amino acid sequence" which does not recite a SEQ ID NO as confusing and unclear as to what amino acid sequence applicant is referring to. Since applicants have cancelled this claim, this rejection is moot.

C

Claim 23 has been rejected as indefinite for the recitation "cultured cells". Applicants respectfully disagree with this rejection.

In particular, the Examiner is unclear as to what specific cells are referred to in claim 23. Applicants respectfully direct the Examiner's attention to page 15, lines 10-13 of the specification, which specifically provides as "[e]xamples of ATX cDNAs from a variety of sources...including *inter alia* A2058 carcinoma cells, N-tera 2D1 cells, and human liver". Thus, the skilled artisan recognizes that cultured cells from various sources can be used in the method of claim 23 as autotaxin (ATX) can be isolated and purified from a variety of cultured cells. Reconsideration and withdrawal of this §112 rejection is respectfully requested.

The Examiner has further objected to claim 26 for not referencing an amino acid sequence by either a SEQ ID NO: or by residue position within a disclosed SEQ ID NO:. Applicants have amended the claim to address the Examiner's concerns. Reconsideration and withdrawal of this §112 rejection, second paragraph is respectfully requested.

Claims 26-27 have been rejected under 35 U.S.C. §112, first paragraph. In particular, the Examiner asserts that claims 26 and 27 refer to sequence fragments that were not explicitly identified in the parent application 08/944,221 (sic: 08/977,221). Applicants respectfully disagree with this rejection.

Specifically, the amino acid sequence of claims 26-27 is located between residues 115 and 127 of SEQ ID NO:34, as discussed above. Further, applicants respectfully direct the Examiner's attention to page 10 of the specification under the description of Figure 18, which states "[t]he putative phosphodiesterase active site is indicated by emboldened lines" and additionally, Figure 18, where the amino acid sequence of claims 26-27 is emboldened in the hATX sequence from residue 101 through 113. Therefore, the sequence fragments referenced in claims 26 and 27 was not specifically identified in the specification as originally filed (i.e. in 08/977,221) and therefore do not constitute new matter. Applicants respectfully request reconsideration and withdrawal of this §112, first paragraph rejection.

C

As required by 37 C.F.R. 1.121, a "marked up" version of the replacement paragraphs of the specification is attached with additions indicated by underlining and deletions by brackets.

Allowance of the pending claims is respectfully requested. Early and favorable action by the Examiner is earnestly solicited.

The Commissioner is hereby authorized to charge any additional fees which may be required for this amendment, or credit any overpayment to Deposit Account No. 13-4500, Order No. 2026-4149US4.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition and for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 13-4500, Order No. 2026-4149US4. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.

Respectfully submitted,

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Dated: May 14, 2001

By: _____
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C

VERSION WITH MARKINGS TO SHOW CHANGES MADE

On page 10, lines 25-35, please replace the paragraph describing Figure 18 with the following:

> --Figure 18: Comparison of amino acid sequences of ATX and PC-1. The amino acid sequences of ATX and PC-1 are compared. Amino acid identity is indicated by a vertical line between the sequences. The location of the putative transmembrane/ signal sequence is shown by a solid line. The two somatomedin B domains are identified by dashed lines. The putative phosphodiesterase active site is indicated by emboldened lines (residues 201 through 213 of SEQ ID NO:69). The loop region of a single EF hand loop region is identified with double lines. The presumed cleavage site for each protein is indicated with arrows.--

Please amend the following claims:

23. (amended) A method of purifying the autotaxin polypeptide of claim [20 or 21] 26 comprising the steps of:

iv) collecting and concentrating supernatant from cultured cells whereby a first preparation of said polypeptide is produced;

v) salt fractionating said first preparation to produce a second polypeptide preparation; and

isolating said polypeptide from said second preparation so that said polypeptide is obtained in substantially pure form.

26. (amended) An isolated polypeptide [according to claim 20] comprising an amino acid sequence of human autotaxin having phosphodiesterase activity and cell motility-stimulating activity, wherein the polypeptide comprises the

amino acid sequence 5'-Tyr-Met-Arg-Pro-Val-Tyr-Pro-Thr-Lys-Thr-Phe-Pro-Asn-3', residues 201 through 213 of SEQ ID NO:69.